

## ABSTRACT OF THE DISCLOSURE

A process control method is described which uses measurements from magnetic field sensors to monitor the condition of material, such as from a heat treatment process. The sensors can be single element sensors or sensor arrays, can be used to periodically  
5 inspect selected locations, mounted to the test material, or scanned over the test material to generate two-dimensional images of the material properties. The sensors can be exposed to the same process conditions as the material, such as elevated temperatures, or the shielding layers can be placed between the test material and the sensors to reduce sensor exposure to the processing conditions. Additional property measurements, such  
10 as sensor lift-off, can be used to ensure proper sensors operation.